Figure 1.1 - Project Location

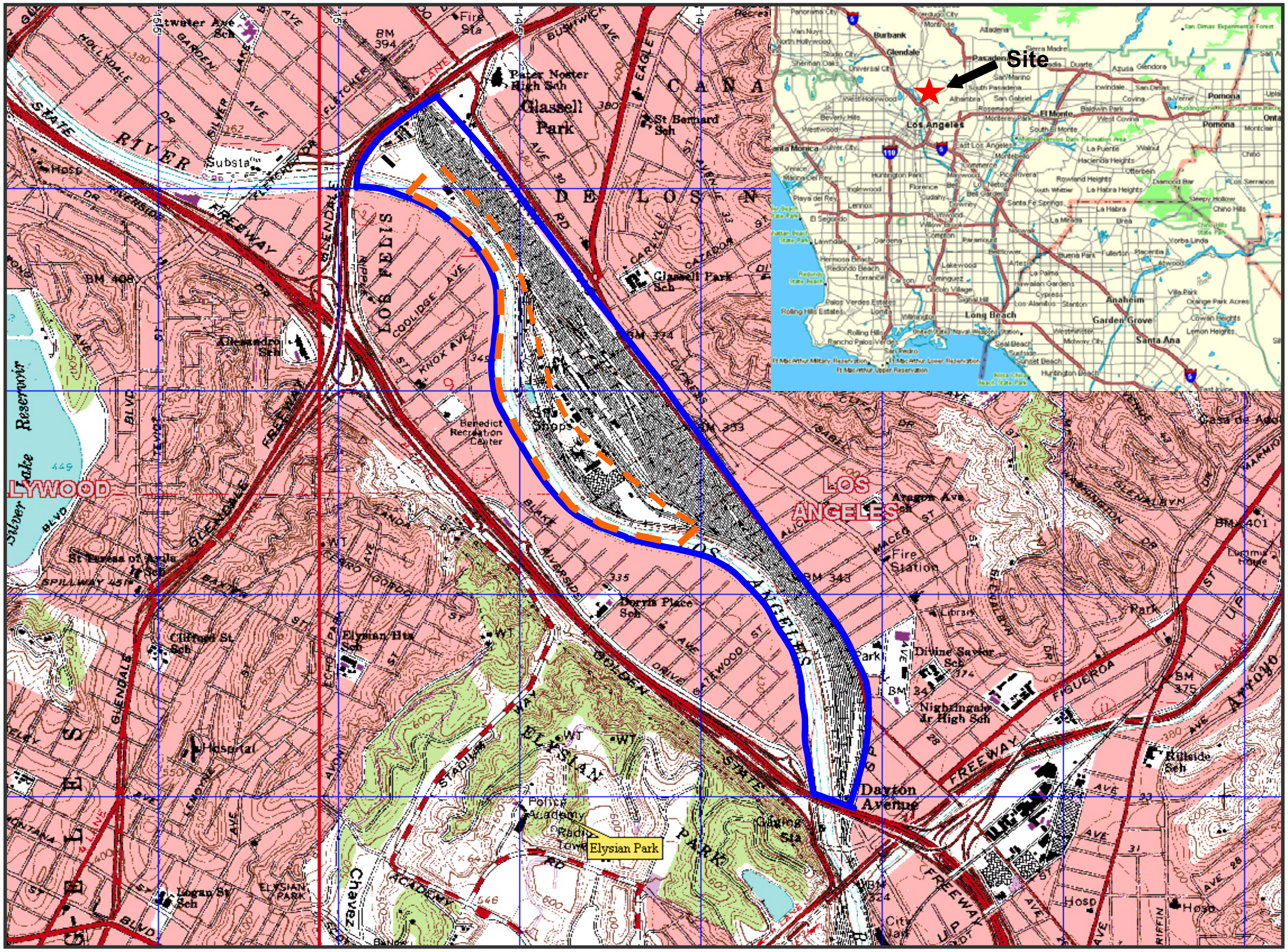


Figure 1.2 - Southern Pacific Railroad Historical Use Areas

Figure 1.3 - Existing Parcel Layout

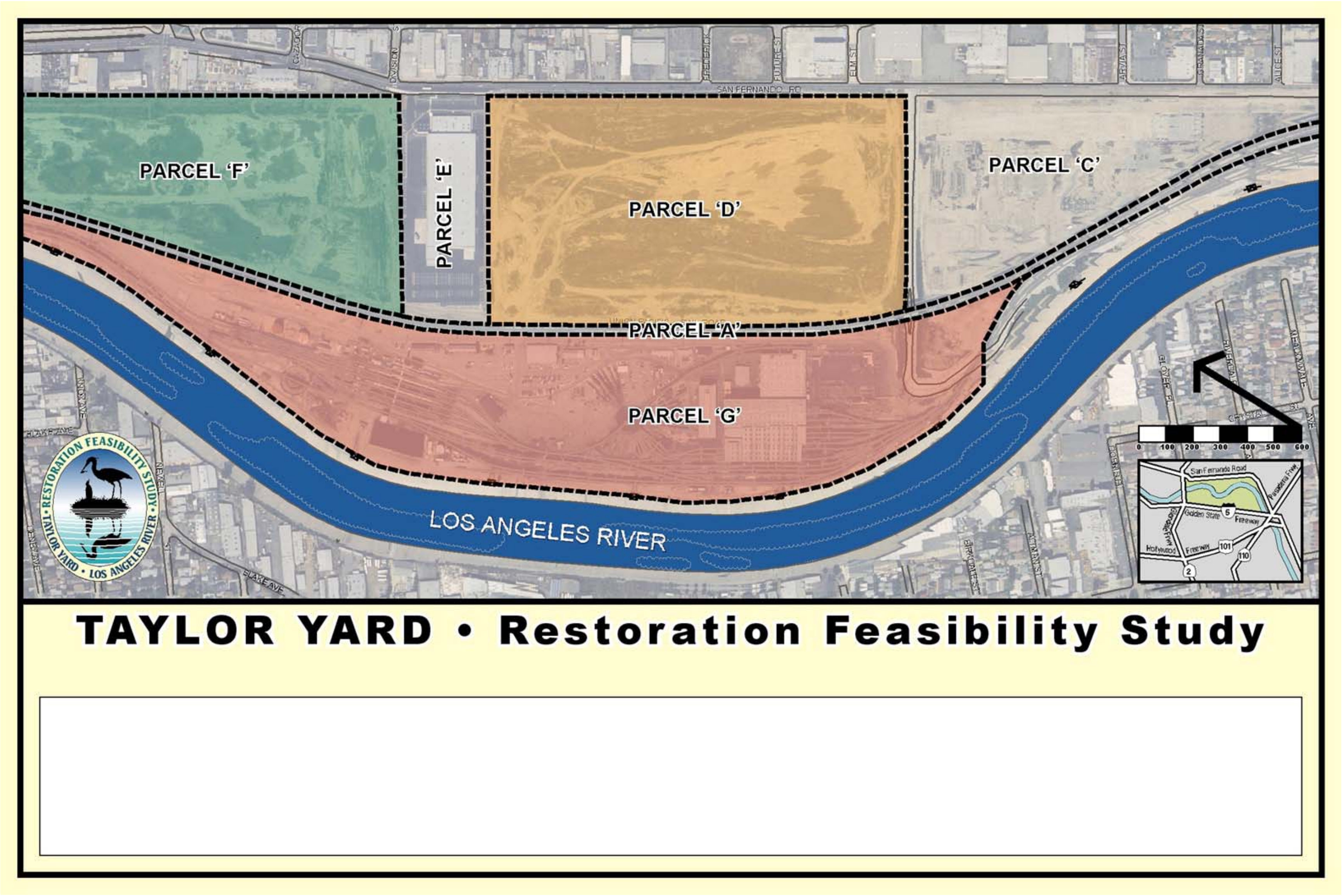


Figure 1.4 - New Features Since 1993 Workshop

Figure 2.1 - Existing Land Use Designations

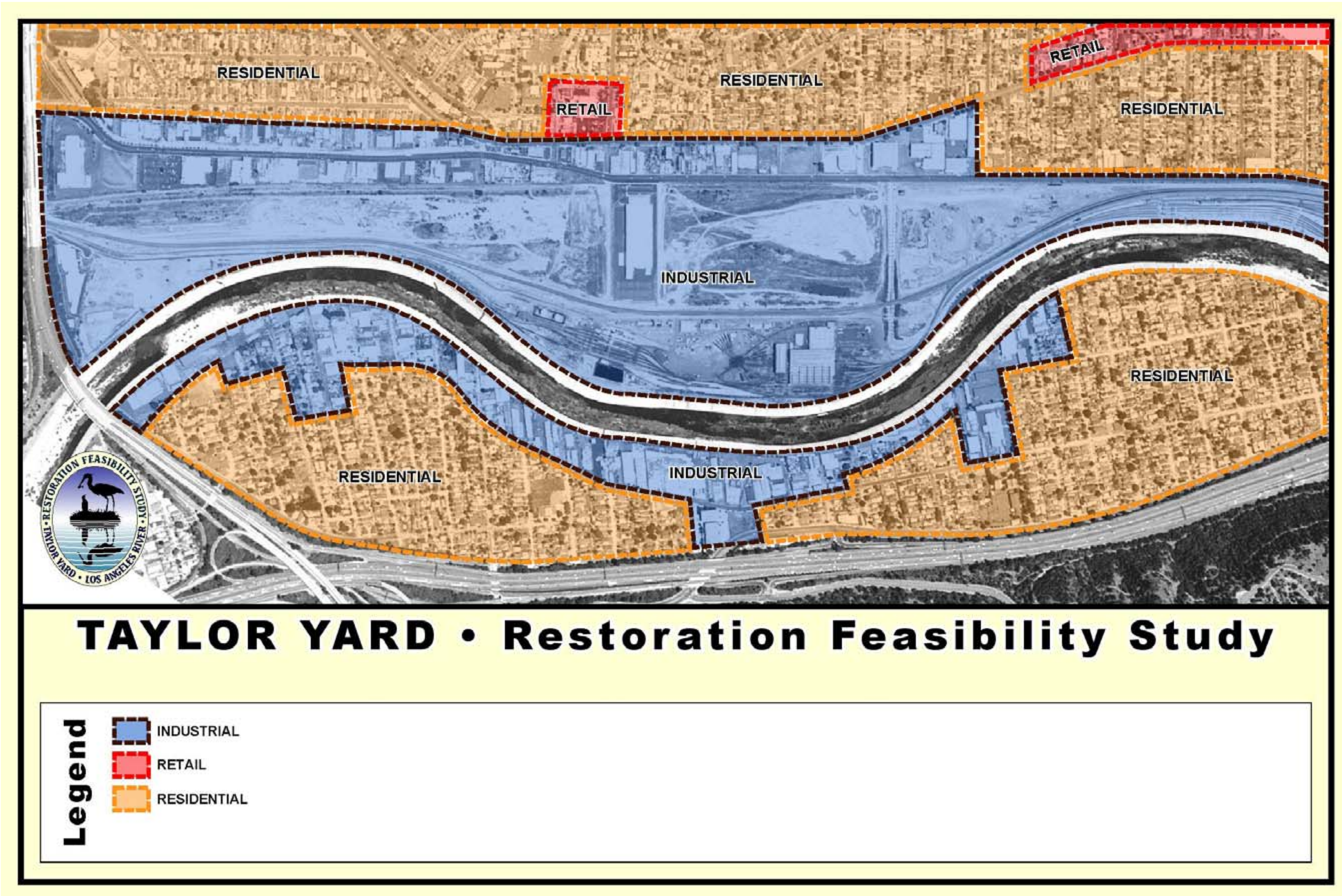
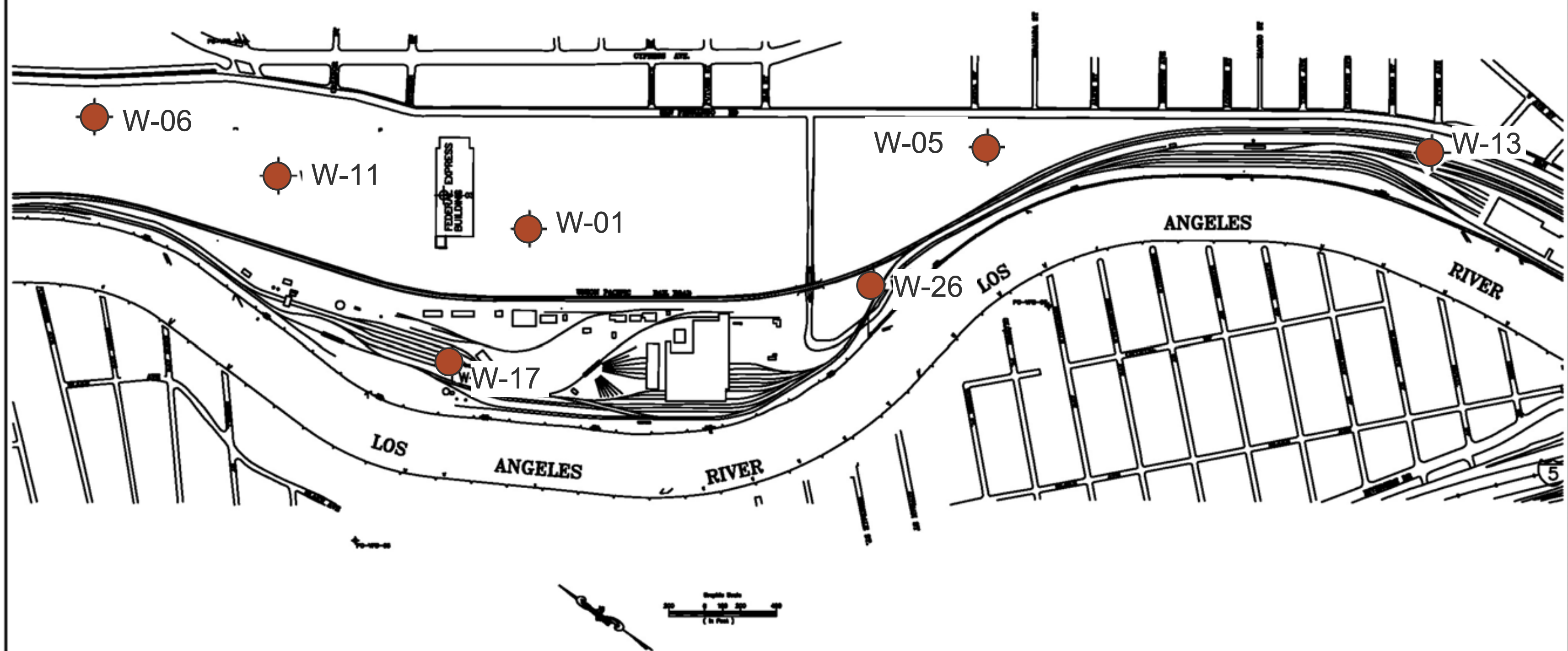


Figure 2.2 - Water Sources

Figure 2.4 – Locations of Groundwater Monitoring Wells



CALIFORNIA STATE COASTAL CONSERVANCY TAYLOR YARD WETLAND RESTORATION STUDY	EVEREST EVEREST INTERNATIONAL CONSULTANTS, INC. 444 W. OCEAN BLVD., SUITE 1104 LONG BEACH, CA 90802 TEL (562) 435-9305 FAX (562) 435-9310	APPROVED:	SCALE: AS SHOWN	DATE: 1/5/01
		DESIGNED: CHECKED:	PROJECT NO. 0017	SHEET:

Figure 2.5 - Existing Vegetation

Figure 2.6 - Contaminants Exceeding Screening Criteria Levels

Figure 2.7 - Site Infrastructure Components

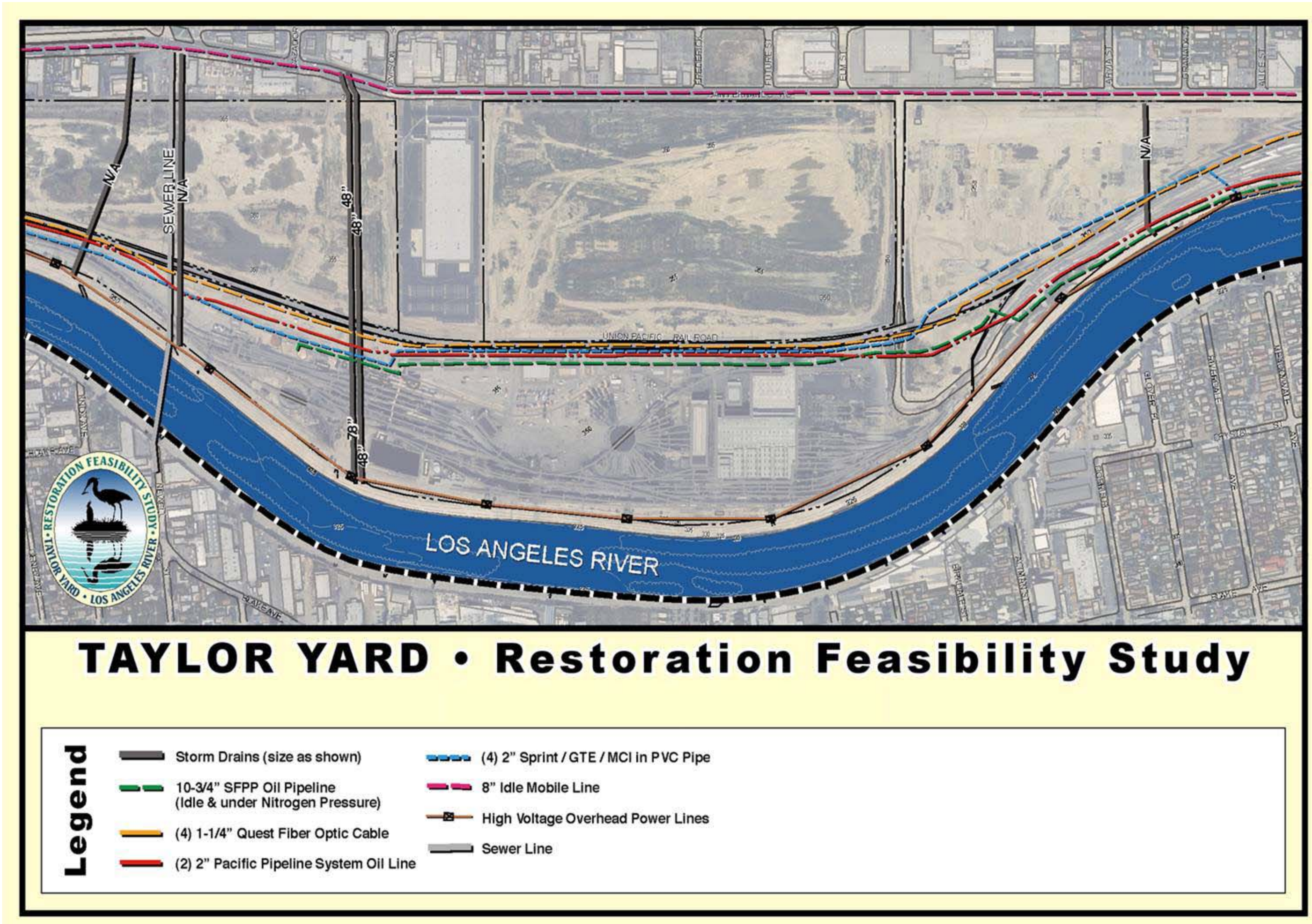


Figure 4.1 - Alternative 1: Optimize Flood Storage

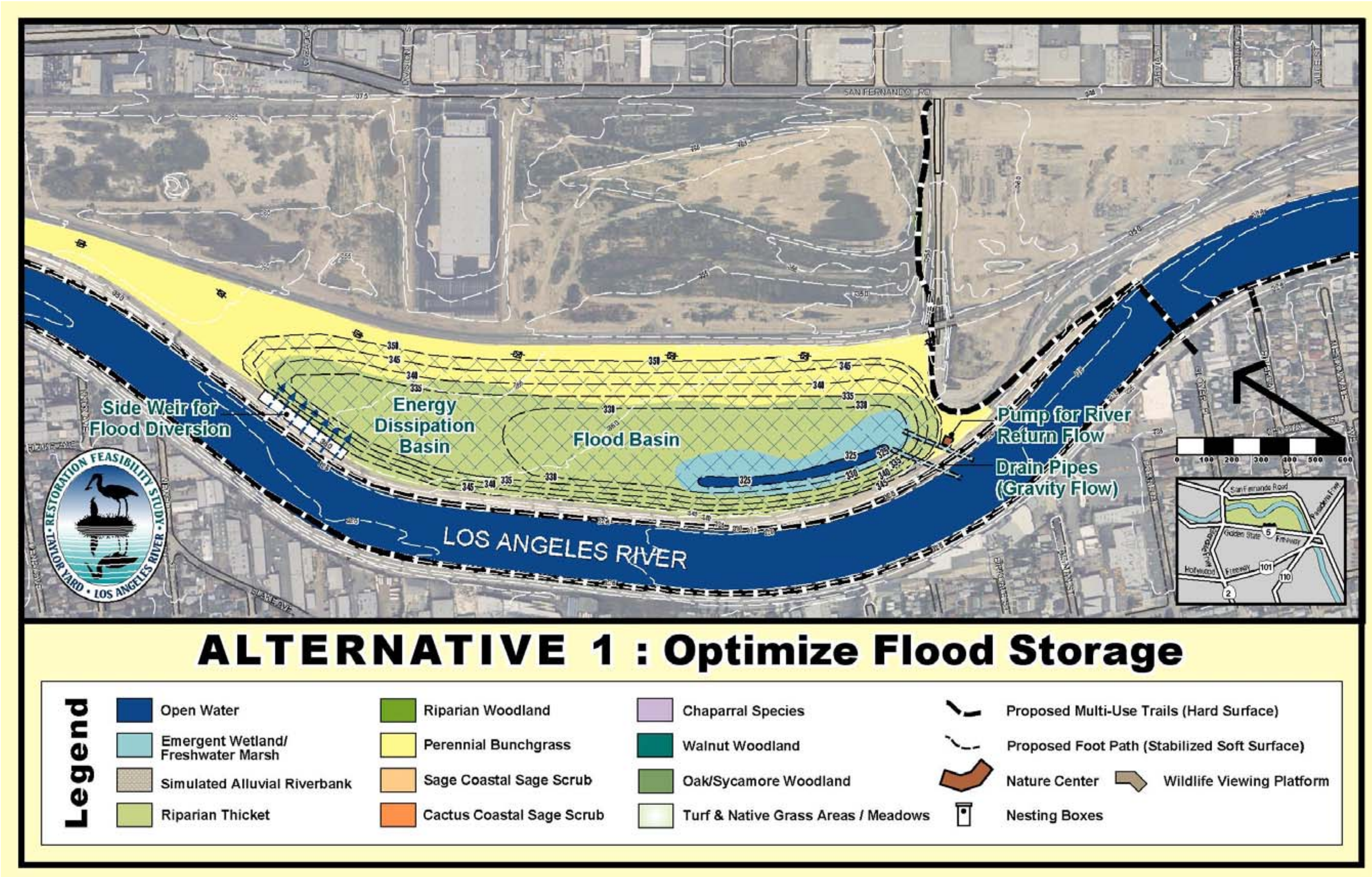


Figure 4.2 - Alternative 1: Optimize Flood Storage Typical Cross Sections

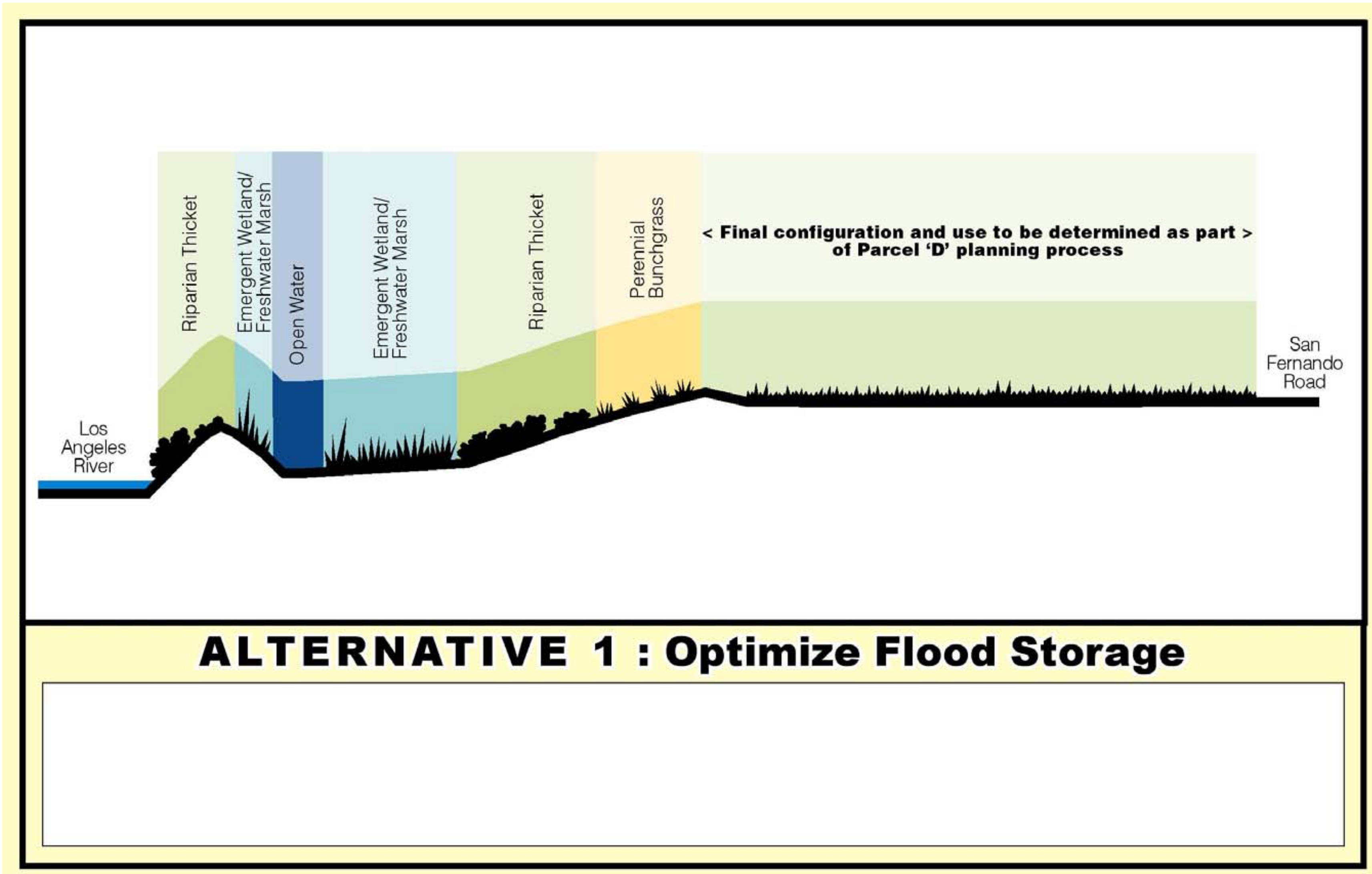


Figure 4.3 - Alternative 2: Optimize Habitat Diversity

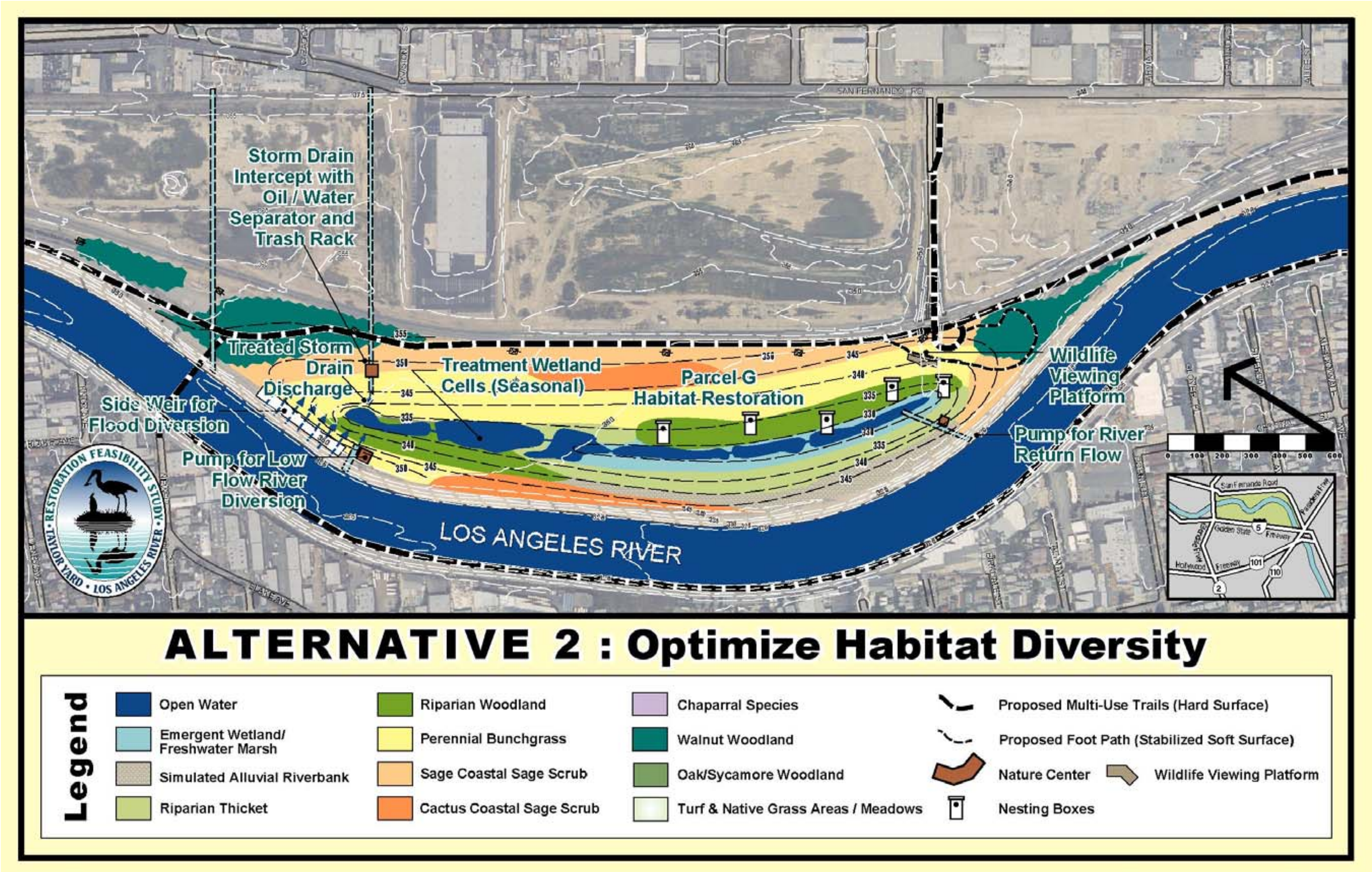


Figure 4.4 - Alternative 2: Optimize Habitat Diversity Typical Cross Sections

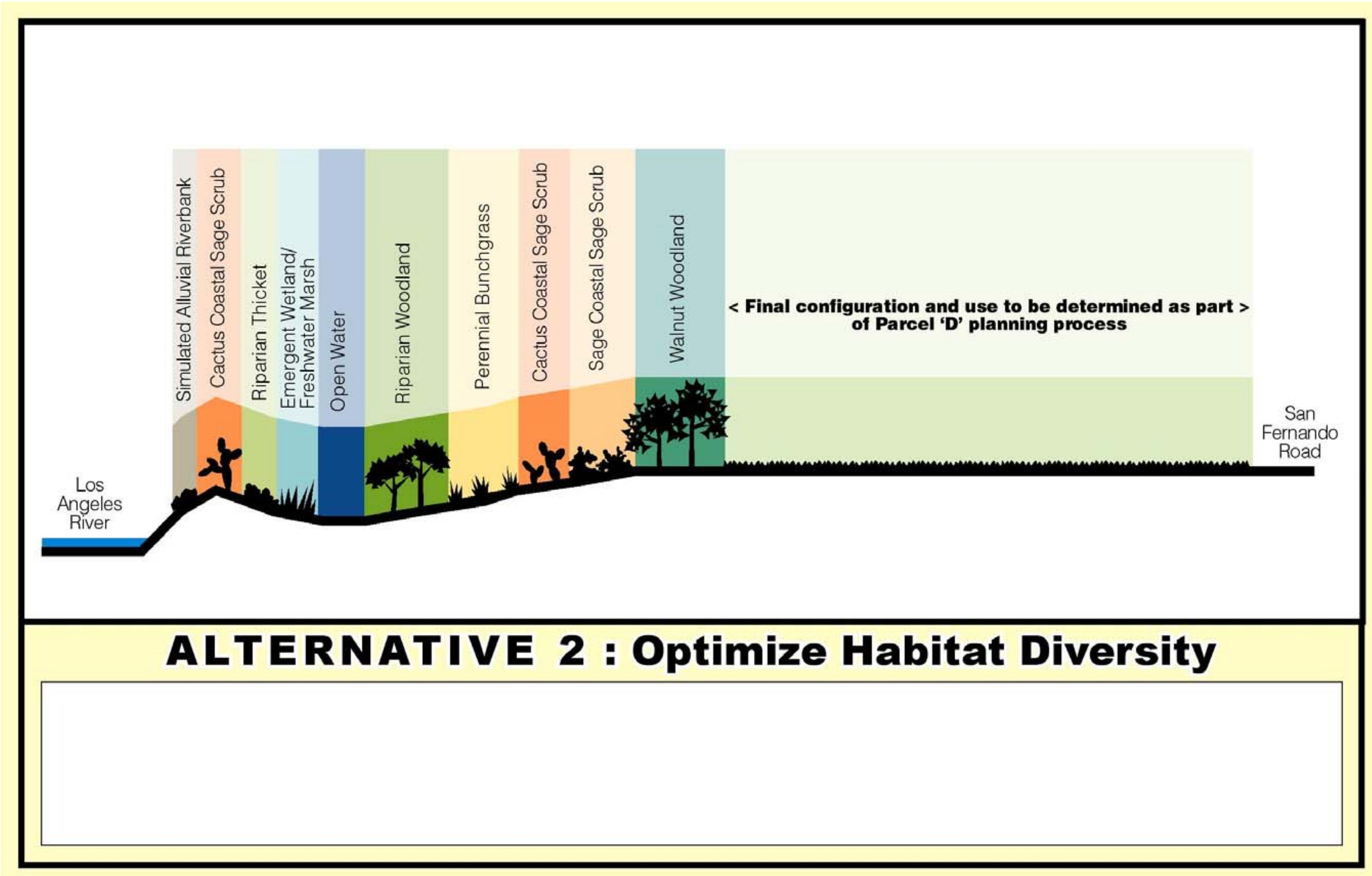


Figure 4.5 - Alternative 3: Optimize Upland Habitat

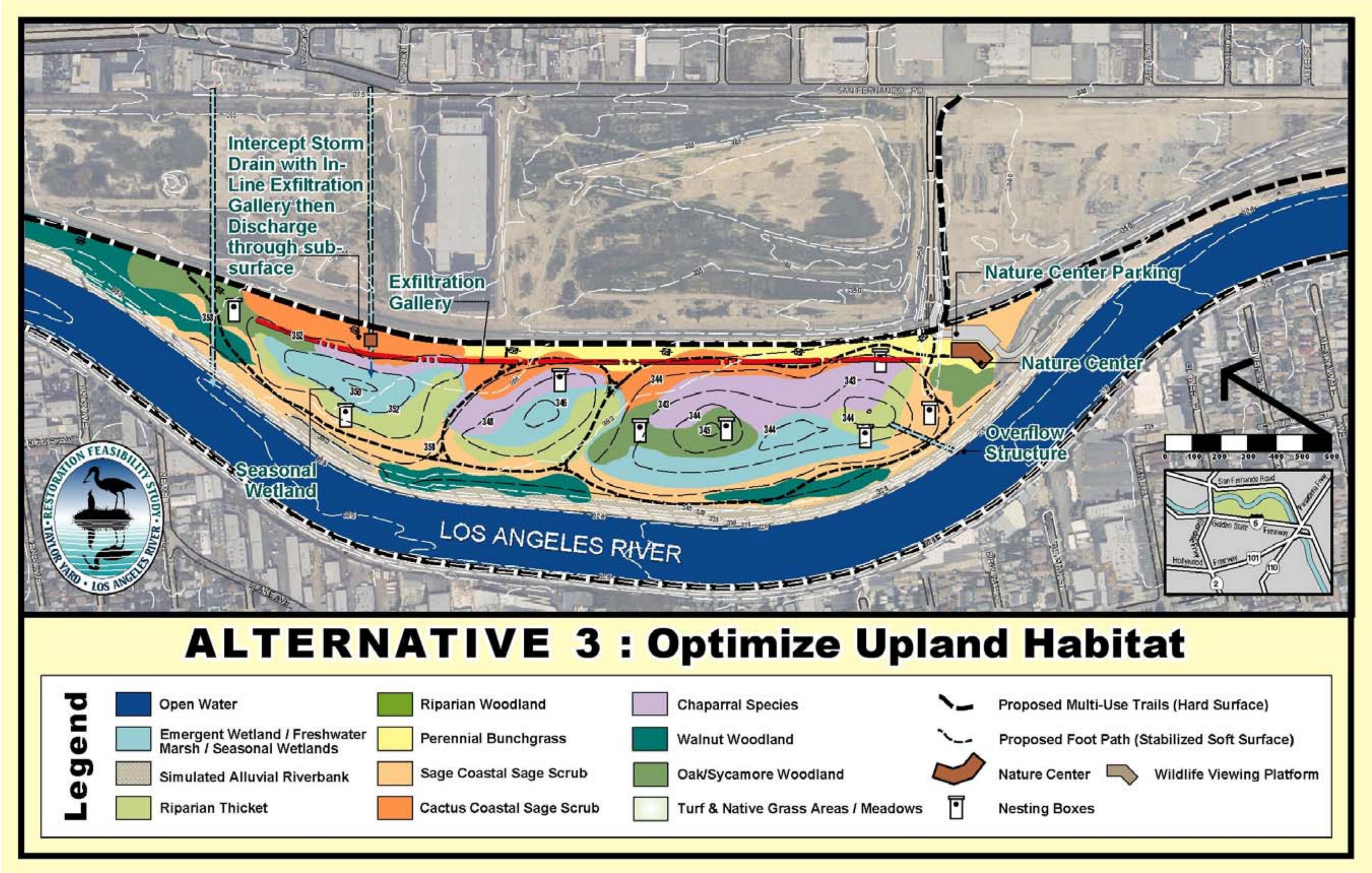


Figure 4.6 - Alternative 3: Optimize Upland Habitat Typical Cross Sections

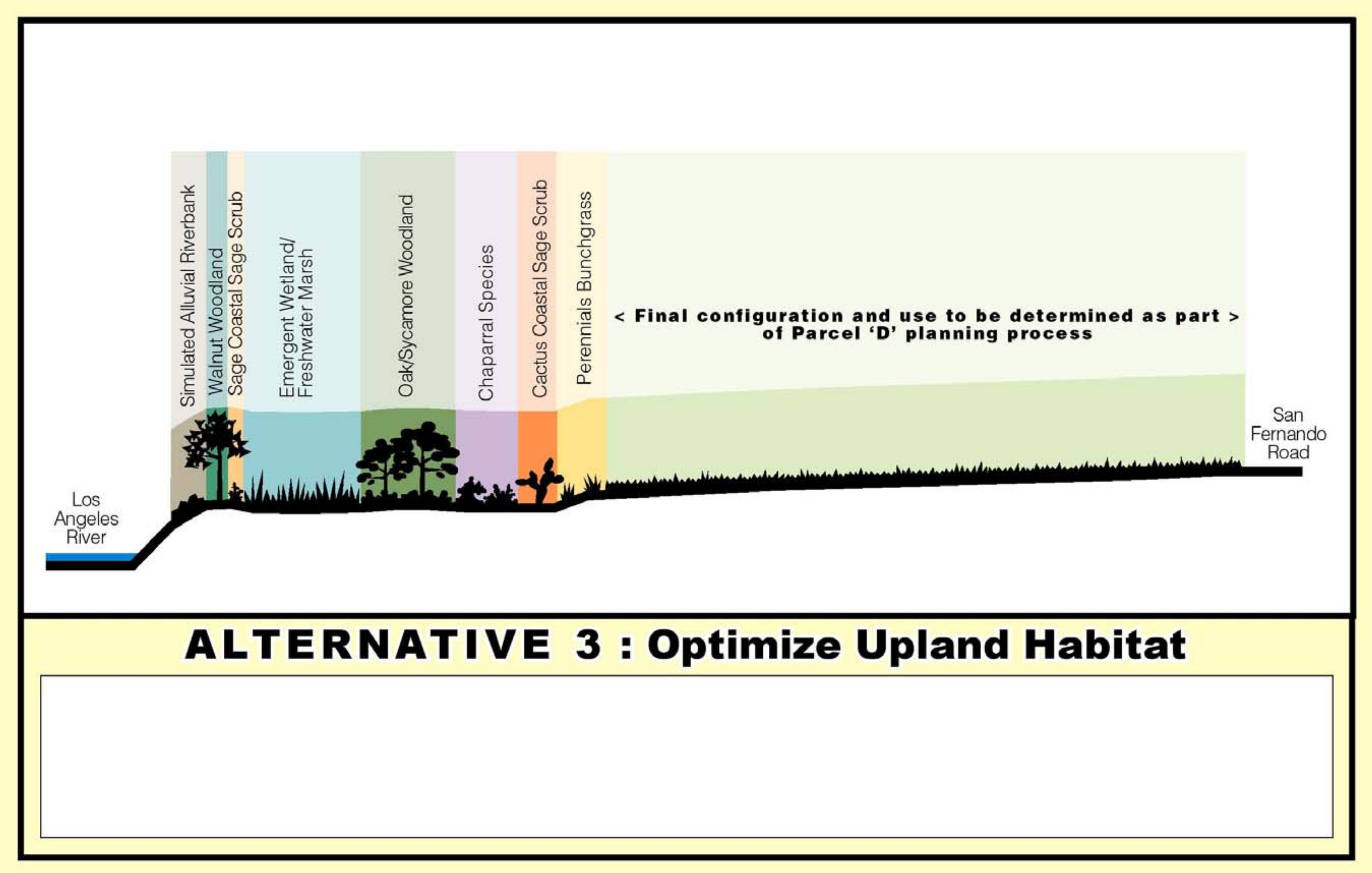


Figure 4.7 - Alternative 4: Naturalize River Edge (Levee Wall Removal)

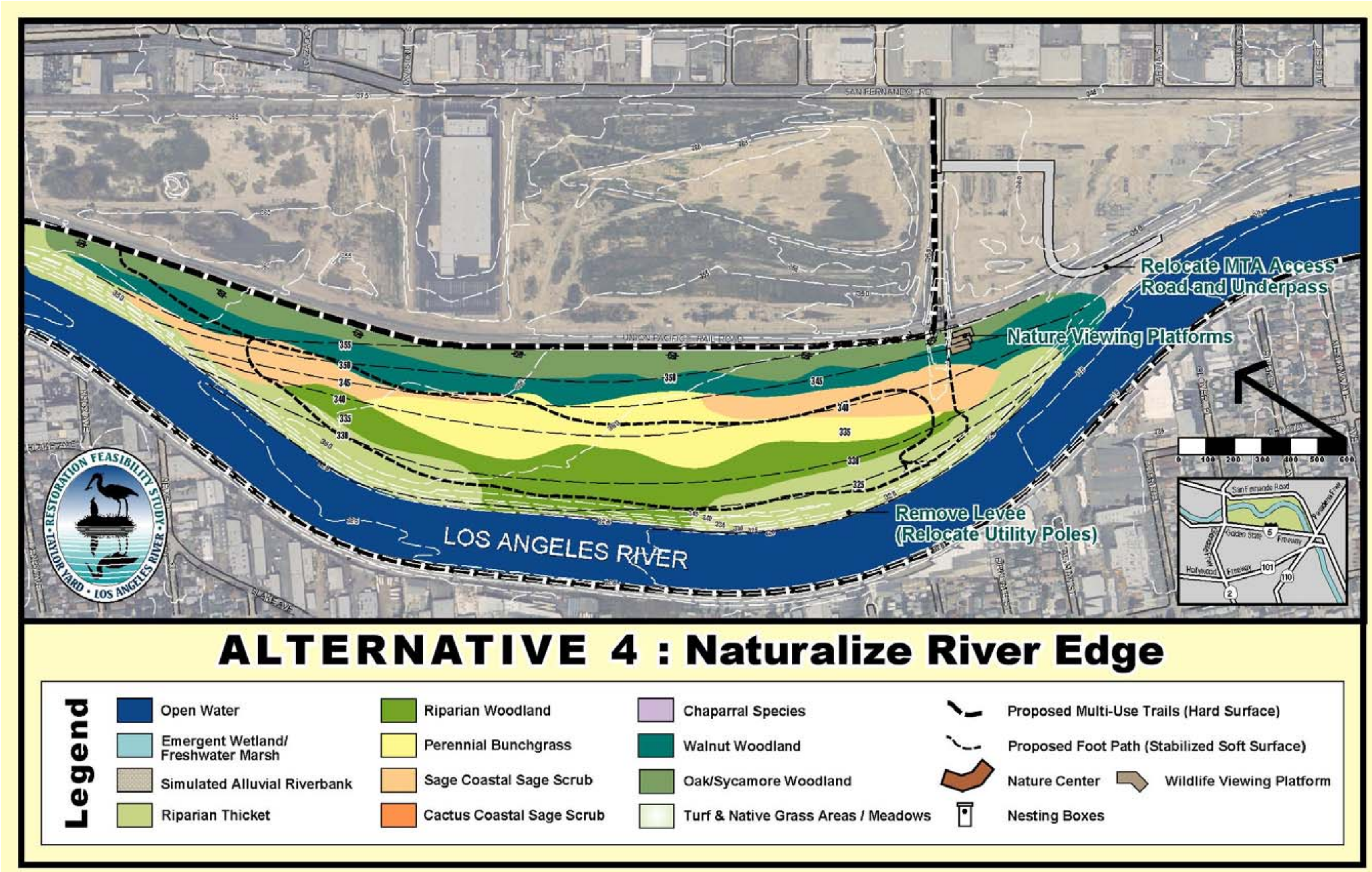


Figure 4.8 - Alternative 4: Naturalize River Edge (Levee Wall Removal) Typical Cross Sections

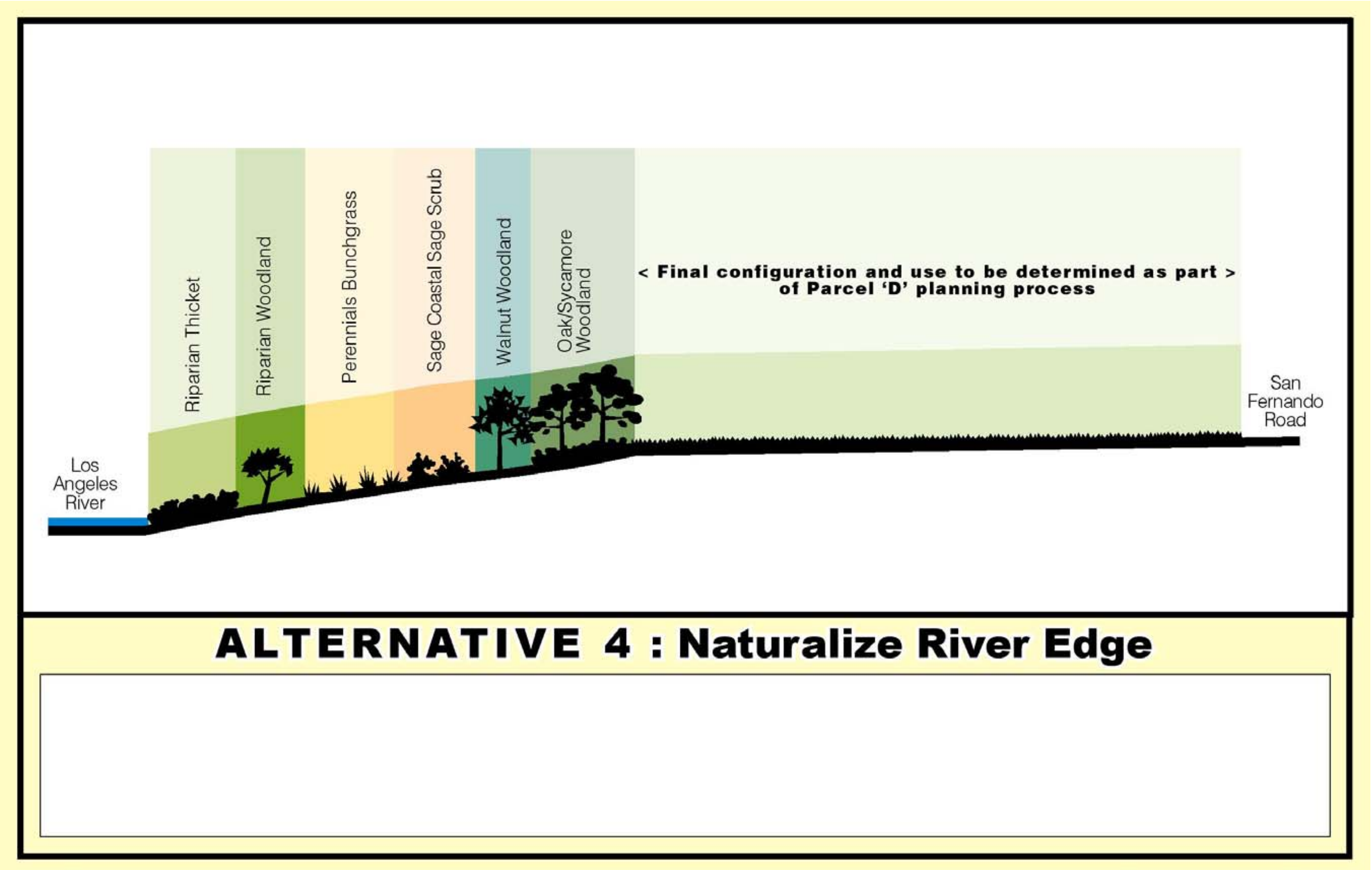
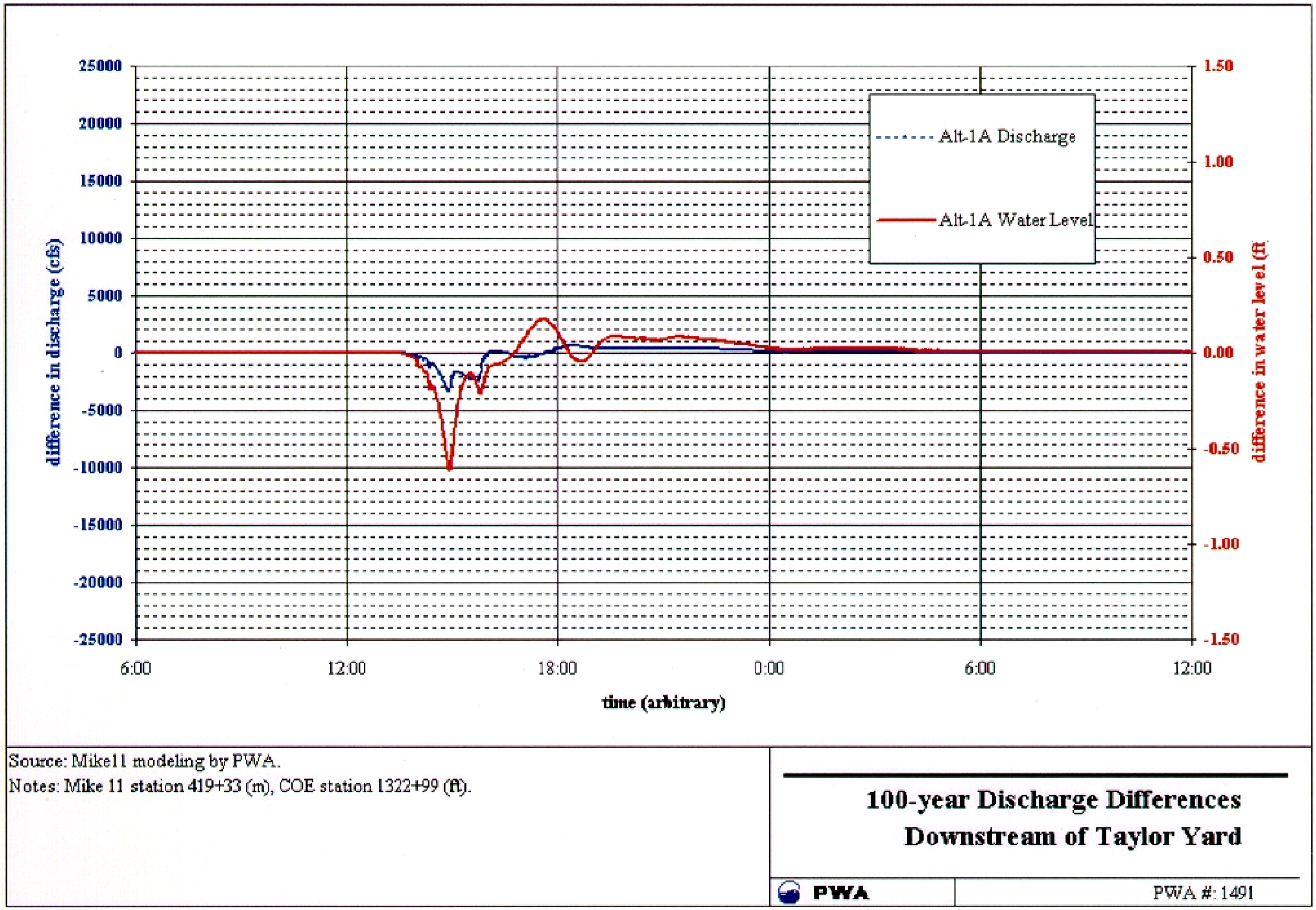


Figure 5.1 - Alternative 1: Peak LAR Discharge Differences Downstream of Taylor Yard



Source: PWA, 2001

Figure 5.2 - Selected Locations of 9 Comparable Restoration Sites

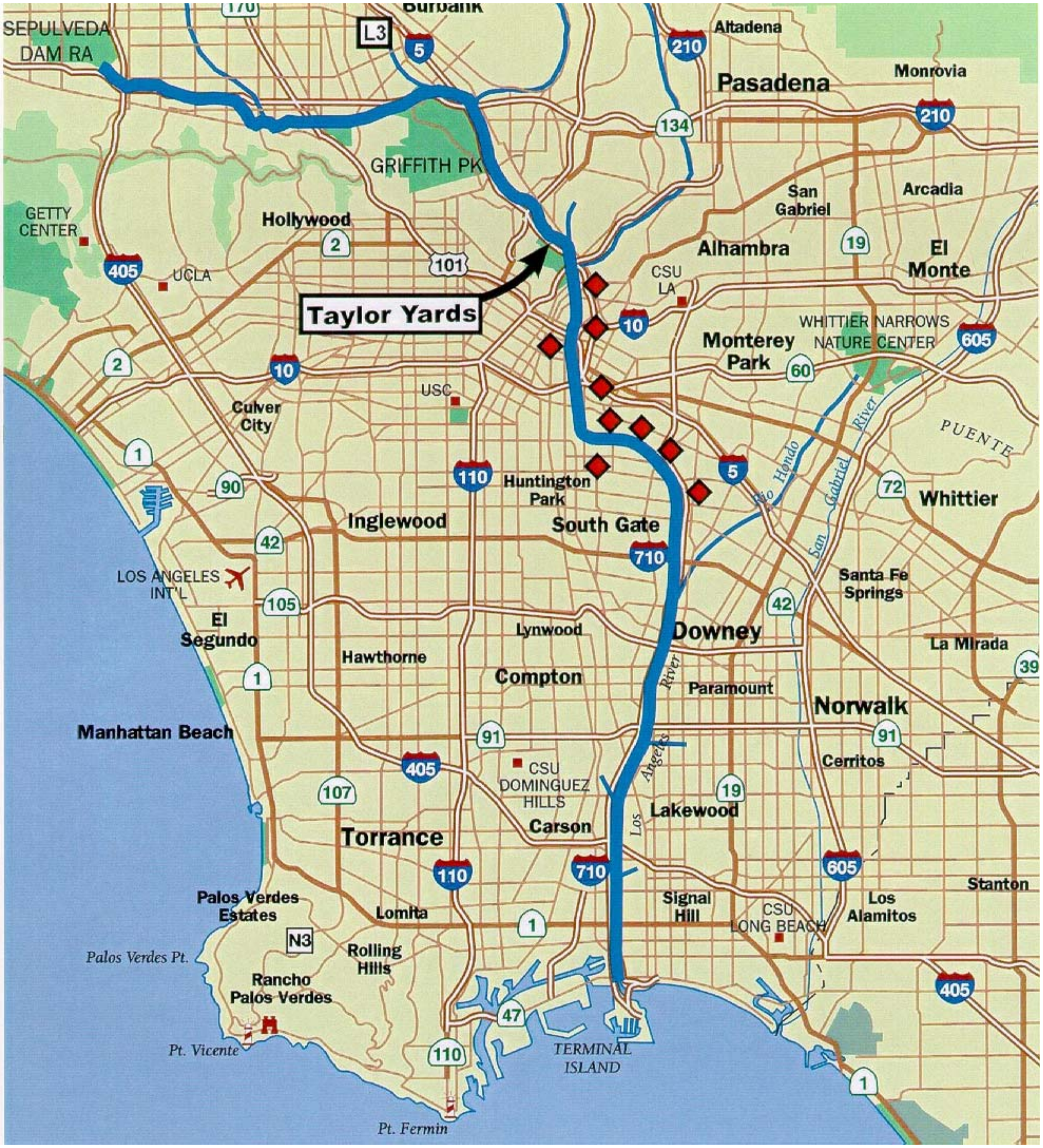
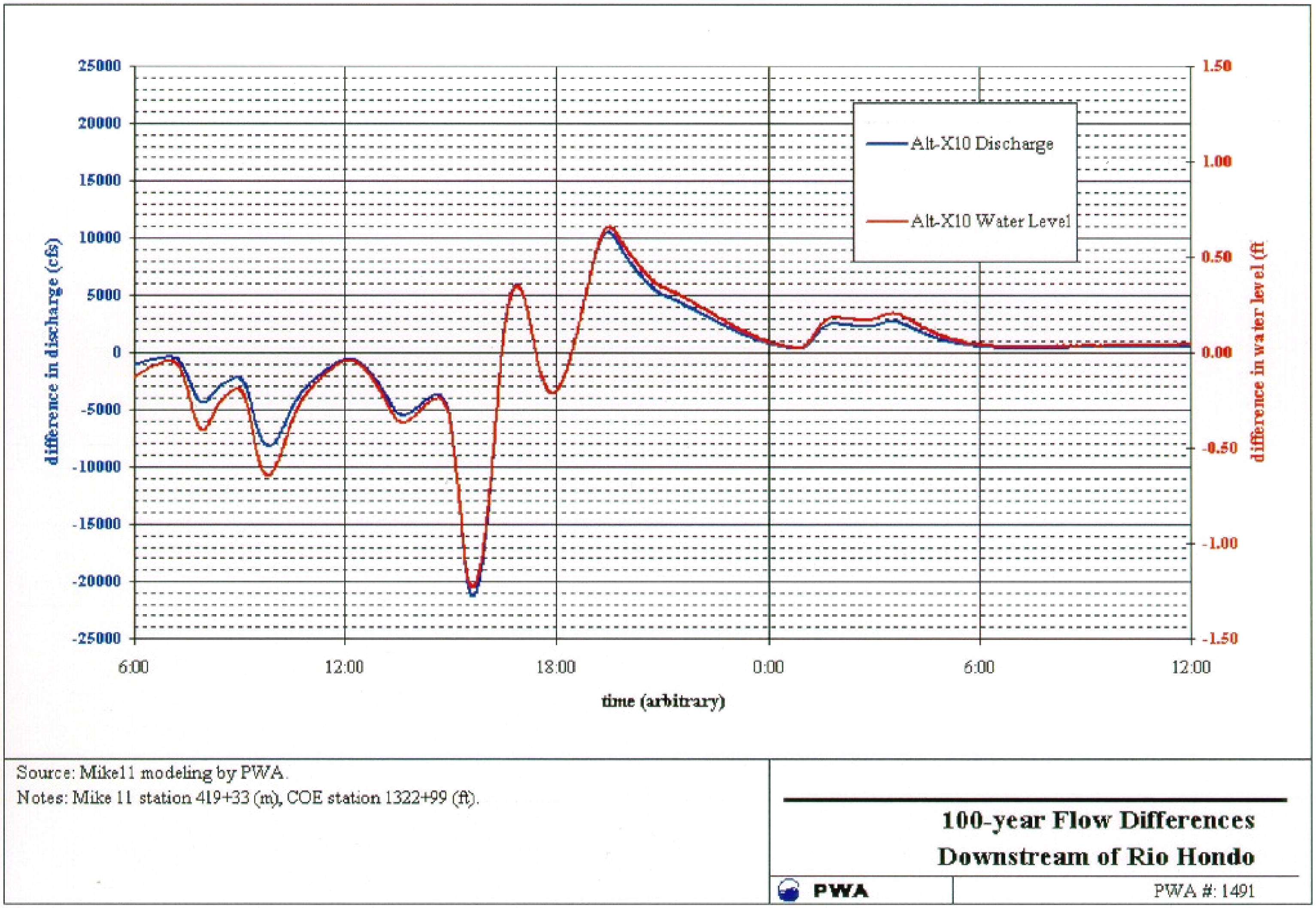
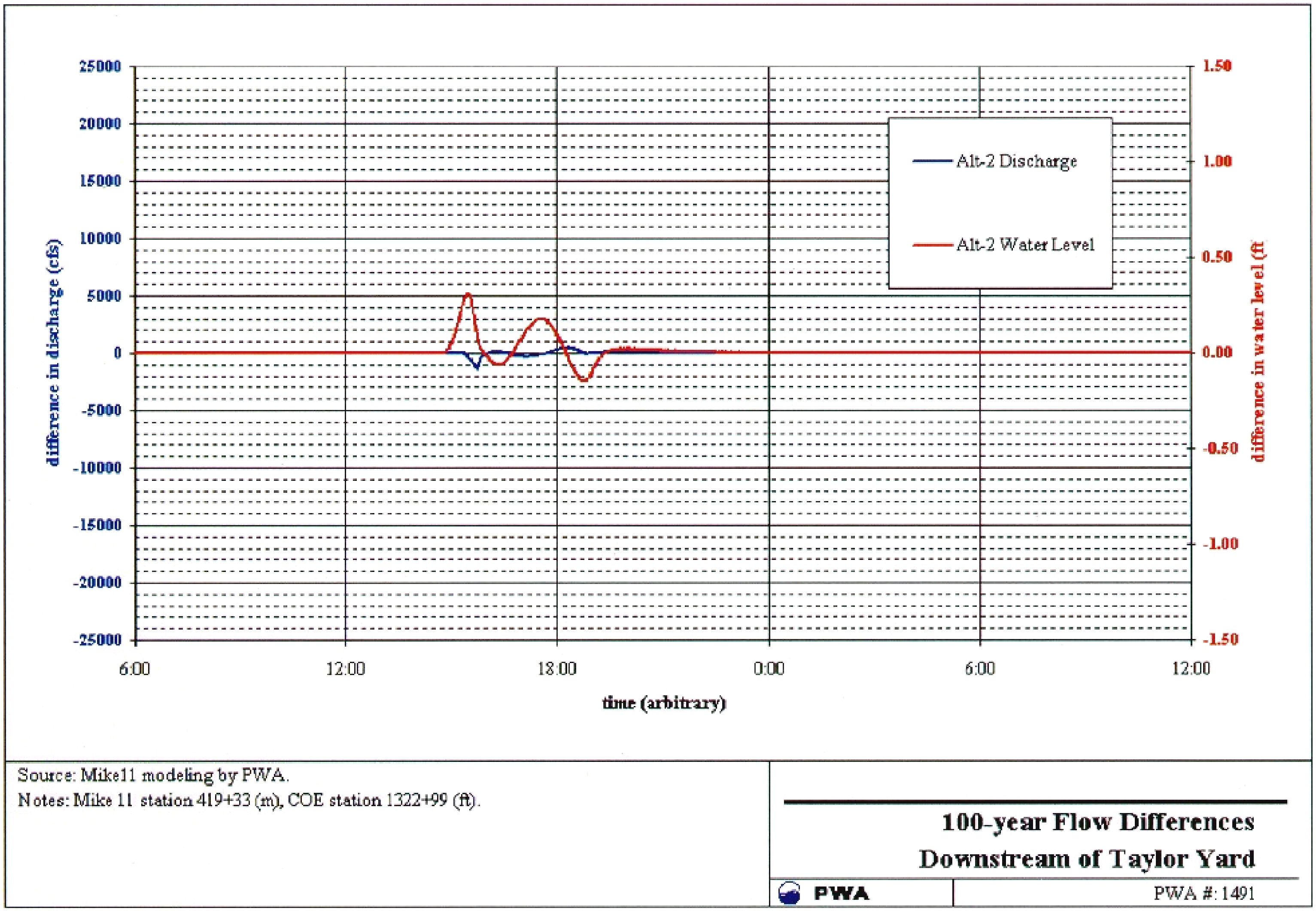


Figure 5.3 - Los Angeles River Floodplain Restoration Program Evaluation: Peak LAR Discharge Differences Downstream of Rio Hondo



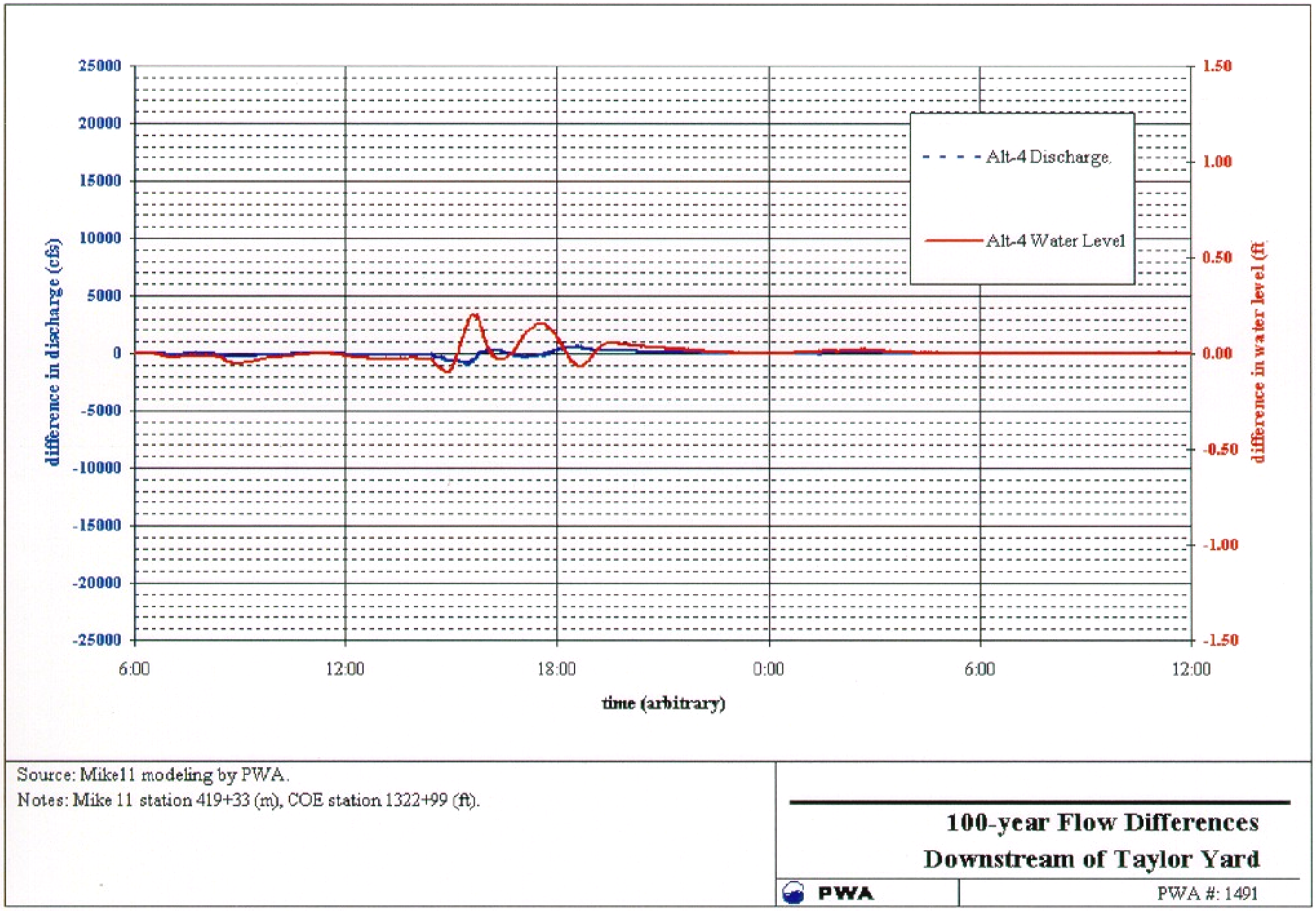
Source: PWA, 2001

Figure 5.4 - Alternative 2: Peak LAR Discharge Differences Downstream of Taylor Yard



Source: PWA, 2001

Figure 5.5 - Alternative 4: Peak LAR Discharge Difference Downstream of Taylor Yard



Source: PWA, 2001

Table 5.5 - Alternative Comparison

	Alternative 1 Optimize Flood Storage	Alternative 2 Optimize Biodiversity	Alternative 3 Optimize Upland	Alternative 4 Levee Removal
Earthwork				
Excavation feasibilty/cost	Large red	Large red	Yellow	Large red
Disposal feasibility/cost	Large red	Large red	Small red	Large red
Grading requirements	Small red	Large red	Large red	Medium red
Infrastructure				
Hydraulic structure feasibility/cost	Large red	Large red	Large green	Small red
Utilities relocation and protection	Small red	Medium red	Small green	Large red
Maintenance (access and difficulty)	Yellow	Large red	Yellow	Large red
Flood storage improvement	Large green	Small green	Yellow	Medium green
Soil and Groundwater Contamination				
On-site treatment feasibility/cost	Large red	Medium red	Small red	Large red
Off-site treatment feasibility	Medium red	Medium green	Medium green	Medium red
Off-site treatment cost	Large red	Medium red	Small red	Large red
Effects on groundwater	Large red	Medium red	Yellow	Large red
Water Sources				
Los Angeles River	Small red	Small green	Yellow	Large green
Stormwater runoff	Medium green	Medium green	Small red	Yellow
Glendale effluent	Small green	Small green	Small green	Yellow
Groundwater	Medium red	Medium red	Small green	Large red
Groundwater/surface water isolation	Large red	Medium red	Large green	Large red
Landscaping				
Public access to Parcel G site	Medium red	Yellow	Medium green	Yellow
Public access to view river	Medium green	Yellow / Small red	Small green	Large green
Able to provide non-public wildlife area	Small green	Large green	Yellow	Medium green
Planting plan complexity	Small green	Large red	Small red	Yellow
Construction cost	Small green	Medium red	Medium red	Small red
Short-term maintenance requirements	Yellow	Small red	Small red	Small red
Irrigation demand	Yellow	Small red	Medium red	Yellow
Ecological function				
River channel connectivity	Medium green	Small green	Small red	Large green
Provide riparian thicket habitat	Large green	Large green	Small green	Large green
Provide wetland habitat	Large green	Large green	Yellow	Small green
Provide grassland/scrub habitat	Small green	Large green	Medium green	Medium green
Provide upland habitat	Small green	Small green	Large green	Small green
Sustainability	Small red	Medium red	Large green	Large green
Regulatory Requirements				
NPDES	Large red	Large red	Yellow / Small green	Yellow
DTSC	Large red	Large red	Small red	Large red
LA RWQCB	Large red	Large red	Large green	Small red
AQMD	Large red	Large red	Small red	Large red
ULARA	Large red	Large red	Small red	Medium red

Legend:

Large red (Worst), Medium red, Small red, Yellow (Neutral), Small green, Medium green, Large green (Best)

2.3.2 Los Angeles River

The LAR drains a watershed that covers 834 square miles. While only a portion of this runoff passes the southwest boundary of Taylor Yard, the adjacent section of the LAR conveys flood flows, urban runoff, and treated wastewater effluent from the northern reaches of Los Angeles to the Pacific Ocean at Long Beach. Historically, the river flowed continuously through this section fed by groundwater that was forced up by relatively shallow, impermeable geologic strata underlying this portion of the LAR (Gumprecht, 1999). However, during the early part of the 1900's the City of Los Angeles Department of Water and Power (LADWP) implemented an extensive water extraction program throughout the SFV that lowered the groundwater level upstream of the Glendale Narrows area effectively eliminating the dry season water that naturally flowed through the LAR (Gumprecht, 1999).

The Los Angeles River near Taylor Yard

In the 1980's, dry season flows returned to the LAR fed by wastewater treatment effluent from the Tillman and Glendale Sewage Treatment Plants (STPs) and local urban runoff. These water sources continue to provide flows to the LAR throughout the year and provide the base flow during the dry season. As a result, riparian vegetation and associated wildlife have increased throughout the LAR, enhancing the habitat that was impacted through implementation of flood control measures. The increase in stream vegetation has also increased the flood control maintenance effort (USACE, 1992) required to clear the LAR of debris and vegetation that may decrease the ability of the channel to convey flood flows quickly to the ocean.

The hydrology of the LAR has two distinct regimes. The dry season regime of the LAR is characterized by limited storm runoff associated with summer thunderstorms that sometimes occur in the coastal mountains, treated wastewater effluent, and urban runoff. The river flows produced from these sources are relatively small comprising a base flow that rarely rises above the bottom of the river channel. The wet season regime of the LAR is characterized by storm runoff that varies in magnitude depending on the magnitude of the storm and antecedent moisture conditions. The river flows produced from storm events vary substantially, sometimes producing little change over base flow conditions during relatively dry years. At other times, tropical storm cells create torrential river flows that carry large volumes of water, sediment, and debris (e.g., logs, shopping carts, and cars). Storm-fed runoff in the Los Angeles River reaches speeds as high as forty-five miles per hour (Gumprecht, 1999). Most of the time during the wet season, the water level in the LAR is a few feet above the channel bottom , however flows associated with extreme storm events (e.g. 100-year event) can cause the water level to rise to just below the levee top (i.e. approximately 21 feet above the channel bottom. Since the completion of the channel groundwater levels in a localized area near the LAR at the northern end of Taylor Yard are lowered (ULARA Watermaster, 2000 and 2002).

A complicating factor affecting hydrologic conditions in the Narrows has been the increasing releases of reclaimed waters. Releases from the Glendale Sewage Treatment Plant and Tillman Sewage Treatment Plant were started in 1976-77 and 1985-86, respectively. These large year-round releases tend to keep the alluvium of the Narrows area full, even in dry years (ULARA Watermaster, 2000 and 2002).

In summary, the groundwater contamination beneath the Active Yard is part of a regional problem that is currently being addressed by the USEPA and RWQCB. The process will require the identification of PRPs, development of remedial measures, allocation of costs, implementation of remedial measures, and continual monitoring. At Taylor Yard, the regional contamination problem is complicated due to the onsite contribution from rail yard activities as well as offsite contribution from nearby sources. The cleanup process will be part of a basin wide effort that will take decades to complete.

2.8 INFRASTRUCTURE

There are several significant components of infrastructure located throughout the project site. The site is used for transportation, utilities, storm flow conveyance, and flood protection. The various infrastructure components within or near the project site are shown in Figure 2.7 and are described below.

2.8.1 Utilities

The utilities presented below pass through Taylor Yard and protection or realignment must be considered in alternative development.

2.8.1.1 <u>Electric Transmission Lines</u>

Overhead power transmission lines run along the northern levee of the LAR in the Taylor Yard area. The power transmission lines are supported by steel-frame towers on the northern levee with spacing approximately 600 to 800 feet apart. These lines are the property of the LADWP.

Overhead electric transmission lines running along the northern levee of the Los Angeles River at Taylor Yard

2.8.1.2 <u>Telecommunications Lines</u>

Several telecommunication lines run along the southwest side of the active rail line parallel to the northeast border of Parcel G. These lines include a U.S. Sprint Fiber System which consists of a bundle of four 2-inch PVC conduits, one of which is vacant, and the other three used by MCI, Sprint, and AT&T,

respectively. In addition, Qwest telecommunication cables run separate from, but almost parallel to the MCI/Sprint/AT&T conduits (Qwest, 2000, MCI, 2000, AT&T, 1990). The Qwest cables consist of four 1¼-inch and two 2-inch diameter lines. The telecommunication cables are about 2 feet bgs to 3 feet bgs.

2.8.1.3 Oil and Gas Pipelines

A 10-inch diameter pipeline owned by Southern Pacific Pipe Lines Inc. runs almost parallel to the railroad alignment (Southern Pacific Pipe Line, 1998). The existing cover is about 50 inches to 55 inches. It connects to tanks located within Taylor Yard. This facility is presently idle and under nitrogen gas pressure. A 20-inch diameter HP crude pipeline owned by Pacific Pipeline System, LLC also runs almost parallel to the railroad alignment (Pacific Pipeline, 2000). The existing cover is about 4 feet at the minimum. An idle 8-inch pipeline owned by Mobil Oil runs along San Fernando Road (Mobil, 2000). It is far enough from the study area that there should be no impact to this facility.

2.8.1.4 Storm Drains

There are several storm drains that cross Taylor Yard at various depths below ground surface. The five major storm drains were identified by RBF (1993) and are described below.

- Project 480, Unit 1, Line A: This drainage facility consists of a 66-inch diameter reinforced concrete pipe (RCP) that conveys flows from the Fletcher Drive railroad crossing and along Casitas Avenue.
- Sycamore Wash: This drainage facility consists of a 10-foot by 10-foot reinforced concrete box culvert (RCB) running under the UPRC tracks transitioning to a 11-foot by 10-foot concrete open channel for the last 2000 feet before emptying into the Los Angeles River. The storm drain conveys flows from the watershed northeast of Taylor Yard.

A storm drain outlet in the Los Angeles River at Taylor Yard

- Project 480, Unit 3, Portion of Line B: This drainage facility consists of a 10-foot by 12-foot RCB (Project 479, Unit 1, Line F) that runs along Eagle Rock Boulevard then transitions to an 11.5-foot horseshoe arch tunnel. The arch tunnel begins as the box culvert curves away from Eagle Rock Boulevard, continuing under San Fernando Road and the railroad tracks to the Los Angeles River. The capital discharge for this storm drain is 2,550 cfs (LACDPW, 1991).

- Eagle Rock Drain: This drainage facility consists of a 14-foot by 8-foot RCB that runs along Eagle Rock Boulevard. As it curves towards the Los Angeles River, the culvert transitions to an 8.5-foot by 10.5-foot arch section. It transitions to a 10-foot by 10-foot RCB for approximately 1,000 feet under the UPRC Taylor Yard right-of-way. The capital discharge for this storm drain is 4,550 cfs (LACDPW, 1991).
- City-UPRC Drain: This drainage facility consists of a 48-inch RCP that transitions to a 42-inch RCP as it nears San Fernando Road transitioning again to a 30-inch RCP as it crosses San Fernando Road. The pipe splits into two 48-inch reinforced concrete pipes for the next 1,250 feet and then transitions to an open channel for about 150 feet. The open channel transitions into a single 48-inch pipe for 100 feet before transitioning into a 78-inch corrugated metal pipe (CMP) for the last 100 feet before emptying into the Los Angeles River. The capital discharge for this drainage facility is 130 cfs (LACDPW, 1991).

2.8.1.5 <u>Sewers</u>

The sewer lines that cross the Taylor Yard site include a 24-inch diameter cement pipe that runs southerly along Eagle Rock Boulevard. The pipeline alignment bends at Cypress Avenue and passes across San Fernando Road and Taylor Yard. It then crosses the river in a coupled vitrified clay line (21-inch and 15-inch) and connects to the sewer line underneath Newell Street on the opposite side of the LAR (City, 2000a). Another sewer line is located at the northern end of Taylor Yard along Kerr Street. (City, 2001).

2.8.2 Transportation

UPRC and MTA currently use the rail line that separates Parcel D and Parcel G

UPRC and MTA currently use the main rail line that separates Parcel D and Parcel G for operational and maintenance rail activities. The line is located on an earthen embankment approximately 2 feet to 5 feet above the existing ground surface. In addition, there is a service road that runs from San Fernando Road and passes under the main rail line. The road currently provides access for maintenance operations associated with the MTA facility, LACDPW LAR flood control levee, LADWP electric transmission lines, onsite telecommunication lines, oil lines, gas lines, and City storm drains as well as the UPRC Taylor Yard facility.

2.8.3 Flood Protection

The LAR flood control system adjacent to Taylor Yard was completed in 1956. The channel cross-section is trapezoidal in configuration with 3:1 (horizontal to vertical) side slopes and a increased construction and maintenance costs. The potential constraints associated with the various infrastructure facilities are summarized below.

3.2.9.1 Transportation Elements

Rail overcrossing and embankment that bisects the site

The main rail line running along the embankment that bisects the site must be maintained for rail service use by the MTA. In addition, the track must provide continual rail service throughout project construction so any modifications to the rail line must be done in a phased approach utilizing detours to provide uninterrupted service.

The functionality of the service road that extends from San Fernando Road to the MTA maintenance facility cannot be adversely impacted by project development. The road would still be needed in the future after project development for maintenance of the rail line, flood control levee, LAR channel bed, storm drains, and electric transmission lines as well as cable, oil, and gas lines. The existing public access from San Fernando Road to Parcels D and G would have to be maintained under each project alternative. In addition, any regional and local improvement plans for San Fernando Road will have to be taken into account for future planning of the project alternatives.

3.2.9.2 Flood Control Levee

The functional performance of the flood control levee must be maintained so that the existing level of flood protection is not reduced. This means that proposed project development options cannot allow increased water levels at the project site or in the river channel upstream and downstream from Taylor Yard. This might mean that ground elevations around the perimeter of the proposed project have to be raised to limit areas of flood inundation.

The flood control levee, and the supporting tower for the electric transmission lines

3.2.9.3 Electric Transmission Lines

Overhead electric transmission lines and their supporting towers are found along the flood control levee bordering